REMARKS

Claims 1-11 are pending. Claims 1-5 are withdrawn. By this Amendment, Claim 9 is amended and claims 12 – 14 are added. Support for the amendment to claim 9 can be found, for example, in paragraphs [0007], [0052], and [0057]. Support for new claims 12 – 14 can be found, for example, paragraphs [0011] – [0020]. No new matter is added in this amendment.

Rejection under 35 U.S.C. § 112

In the Office Action, claims 9 – 11 are rejected under 35 U.S.C. § 112, first paragraph. According to the Examiner, the means-plus-function limitations of a storage means, a detection means, a means for taking a data combination, and a display means are not described in the specification with adequate disclosure to show what is meant by the claim language.

Applicants respectfully traverse.

Claim 9 has been amended and does not contain means-plus-function language as defined by 35 U.S.C., sixth paragraph. Thus, Applicants respectfully request that this rejection be withdrawn.

First Rejection under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejects Claims 6-8 under 35 U.S.C. § 103(a) as being unpatentable over Wang (WO 02/083918) in view of Nilsson (Analytical Chemistry, Volume 75, Issue 15, p. 348-353, 01 August 2003) and in view of Joos et al. (Current Opinion in Chemical Biology, 2001, Vol. 6, p. 76-80). In particular, the Examiner states that it would be obvious to modify the method of Wang for the detection of oligosaccharide agents using lectins immobilized on a substrate to analyze oligosaccharide structure as suggested by Nilsson since Nilsson discloses the ability of lectins to recognize different sugar structures. The Examiner also states that Joos teaches increasing sensitivity by using an evanescent wave.

This rejection is respectfully traversed.

The present inventors discovered that lectin specificity differs between various lectins more than was known to a person of ordinary skill in the art at the time of the invention. Due to their different affinities, each lectin recognizes extremely small differences in sugar chain structure. However, a person of ordinary skill in the art would not be aware of this and thus would not be motivated to modify the method of Wang for the analysis of sugar chains as recited in claims 6 – 8.

The wide differentiation abilities of each lectin, spanning high to low affinities, can be effectively used by comprehensively comparing quantitative data on their interactions with each sugar chain, and more specifically, by comparing intensity patterns of the affinity between each lectin and sugar chain, to mutually distinguish the structures of sugar chains in numbers far exceeding the number of lectins used. As provided in the present specification, even when a relatively limited number of lectins (for example ten or more types) are used, sugar chains can be mutually distinguished as long as the specificities of the lectins are sufficiently different. This was not know prior to the presently claimed invention, and a person of ordinary skill in the art would not have been motivated to immobilize the various proteins that interact with sugar chains to analyze the sugar chains as presently claimed.

While the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Wang as suggested by Nilsson because Nilsson shows the ability of lectins to recognize different sugar structures makes lectins in valuable biochemical tools, this is incorrect. One of ordinary skill in the art at the time of invention would not be motivated to modify the method of Wang in line with Nilsson's suggestion to analyze oligosaccharide structure using lectins because Nilsson teaches very little about interactions of lectins with sugar chains. In fact, Nilsson states that this field "presents special analytical challenges because of the weak nature of the biomolecular interactions and the solubility differences between carbohydrates… and proteins" (page 250, second column). Thus, there is nothing to motivate a person of ordinary skill to analyze sugar chain structure using a substrate with immobilized proteins that interact with a sugar chain. Even if one of ordinary skill in the art at the time of invention would have attempted to modify the method of Wang in line with Nilsson's teaching, such a person would not have been able to mutually distinguish the

structures of sugar chains in numbers far exceeding the number of lectins used without such detailed experimental data which is disclosed in the specification of the present application and recited as control data in claim 6.

Thus, applicants respectfully request that this rejection of claims 6-8 under 35 U.S.C. § 103(a) be withdrawn.

Second Rejection under 35 U.S.C. § 103(a)

In the Office Action, the Examiner rejects Claims 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Nilsson and in view of Joos et al. as applied to claims 6-8 above, and further in view of Shalon et al. (Genome Res., Vol. 6, p. 639-645, 1996) in view of Pawlak et al. (Proteomics 2002, 2, 383-393).

This rejection is respectfully traversed. As discussed above, Wang and Nilsson cannot be combined to provide the method as described in claims 6 – 8. The system described in claims 9 – 11 are nonobvious for the same reasons. There is nothing in Shalon and/or Pawlak that overcomes the deficiencies of Wang and Nilsson. Thus, applicants respectfully request that this rejection of claims 9 – 11 under 35 U.S.C. § 103(a) be withdrawn.

Provisional Obviousness-Type Double Patenting Rejection

Claims 6 – 8 have been provisionally rejected by the Examiner under the judicially created doctrine of obviousness-type double-patenting as being allegedly unpatentable over claims 1, 11, and 12 of copending Application No. 10/596,692.

Claims 9 - 11 have been provisionally rejected by the Examiner under the judicially created doctrine of obviousness-type double-patenting as being allegedly unpatentable over claims 1 - 9 of copending Application No. 11/917,921.

Upon indication of allowable subject matter in the present application, the allowable subject matter not being patentably distinct from the claims of one or more of the above-cited patent applications, an appropriate terminal disclaimer will be timely filed.

CONCLUSION

Applicant respectfully submits that the application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Dated: November 18, 2009

Respectfully submitted,

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